AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1.   (currently amended) A method of monitoring a power delivery system comprising the steps of:

providing a power generator which generates an output power, a sensor for detecting at least one parameter of the power delivery system, and a controller for receiving input from the sensor and providing control signals to vary operation of the power generator;

monitoring a plurality of parameters associated with the power delivery system; and , including collecting historical data on the parameters, defining at least one condition for at least one parameter based on the historical data, and modeling physical outcomes in accordance with selected parameters; and

applying a set of rules to the ~~parameters~~ at least one condition to determine a state of operation of the power delivery system.

2.   (original) The method of claim 1 further comprising the step of defining a set of rules of operation based upon the parameters associated with the power delivery system.

3.   (original)   The method of claim 1 further comprising the step of signaling fault conditions of the power delivery system in accordance with an outcome of the step of applying the set of rules to the parameters.

4.   (cancelled)

5.   (currently amended)   The method of claim [[4]] 1 wherein the step of defining the at least one condition further comprises the step of utilizing one of a fuzzy logic system and a neural network system to define the at least one condition.

6.   (currently amended)   The method of claim [[4]] 1 wherein the step of defining the at least one condition further comprises the step of defining a range wherein if a parameter falls within the range, the condition for the at least one parameter is acceptable.

7.   (cancelled)

8.   (currently amended)   The method of claim [[4]] 1 further comprising providing an expert system to receive the rules and the at least one condition, wherein the expert system indicates a failure mode criteria in accordance with the application of the rules to the conditions.

9.   (original) The method of claim 1 wherein the parameters include at least one of the group of power conversion efficiency, operating hours of the power delivery system, output actuation of the power delivery system, component temperature, ambient temperature, humidity, particle contamination, communications link error rate, response characteristic, drift in input power, drift in output power, number of contact cycles, number of thermal cycles, number of transients, feedback, and trends in parameter values.

10. (currently amended) A power delivery system, comprising:

a power generator receiving an input power and generating an output power;

a sensor for detecting at least one parameter associate with the power delivery system;

a controller for receiving input from the sensor and providing control signals to vary operation of the power generator; and

a system monitor, the system monitor receiving as input a plurality of signals that define the parameters associated with the power delivery system, the system monitor including a set of rules of operation and applying the set of rules to the parameters to ~~determine~~ predict a future state of operation of the power delivery system.

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11. (original) The power delivery system of claim 10 wherein the system monitor indicates a warning in accordance with the state of operation of the power delivery system.

12. (original) The power delivery system of claim 10 wherein the system monitor further comprises a database for collecting data on the parameters input to the system monitor.

13. (original) The power delivery system of claim 12 wherein the system monitor further comprises a data analysis module that defines at least one condition for at least one parameter and applies the set of rules to the at least one condition.

14. (original) The power delivery system of claim 13 wherein analysis engine includes one of a fuzzy logic system and a neural network system to define the at least one condition.

15. (original) The power delivery system of claim 13 wherein the analysis engine defines the at least one condition by defining a range wherein if a parameter falls within the range, the condition for the at least one parameter is acceptable.

16. (original) The power delivery system of claim 13 wherein the analysis engine defines the at least one condition by modeling physical outcomes in accordance with selected parameters.

17. (original) The power delivery system of claim 13 further comprising an expert system to receive the rules and the at least one condition, wherein the expert system indicates a failure mode criteria in accordance with the application of the rules to the conditions.

18. (original) The power delivery system of claim 13 further comprising a match network receiving the output power, the match network generating an impedance between the power generator and a load.

19.   (original) The power delivery system of claim 13 wherein the parameters include at least one of the group of power conversion efficiency, operating hours of the power delivery system, output actuation of the power delivery system, component temperature, ambient temperature, humidity, particle contamination, communications link error rate, response characteristic, drift in input power, drift in output power, number of contact cycles, number of thermal cycles, number of transients, feedback, and trends in parameter values.

20.   (original) A method of monitoring a power delivery system comprising the steps of:

providing a power generator which generates an output power, a sensor for detecting at least one parameter of the power generator, and a controller for receiving input from the sensor and providing control signals to vary operation of the power generator;

communicating at least one of the plurality of parameters to a remote site;

monitoring the plurality of parameters associated with the power delivery system and communicated to the remote site; and

providing a database at the remote site for storing the plurality of parameters communicated to the remote site.

21.   (original) The method of claim 20 further comprising the step of analyzing the data communicated to the remote site to monitor operation of the power delivery system.

22.   (original) The method of claim 20 further comprising the step of signaling fault conditions of the power delivery system in accordance with an outcome of the step of applying the set of rules to the parameters.

23. (original) The method of claim 20 further comprising the steps of:

at the remote site, monitoring selected ones of the plurality of parameters associated with the power delivery system; and

at the remote site, applying a set of rules to the parameters to determine a state of operation of the power delivery system.

24. (currently amended) The method of claim 23 further comprising the step of at the remote site, defining a set of rules of operation based upon the parameters associated with the power delivery system[[; and]] .

25. (original) The method of claim 23 wherein the step of monitoring the parameters further comprises the step of collecting historical data on the parameters and defining at least one condition for at least one parameter based on the historical data, and the step of applying the set of rules to the parameters applies the set of rules to the at least one condition.

26. (original) The method of claim 23 wherein the step of monitoring the parameters further comprises the step of collecting historical data on the parameters on a plurality of power delivery systems at a plurality of remote sites and defining at least one condition for at least one parameter based on the historical data, and the step of applying the set of rules to the parameter applies the set of rules to the at least one condition.

27.   (original) The method of claim 26 wherein the step of defining the at least one condition further comprises the step of utilizing one of a fuzzy logic system and a neural network system to define the at least one condition.

28.   (original) The method of claim 26 wherein the step of defining the at least one condition further comprises the step of defining a range wherein if a parameter falls within the range, the condition for the at least one parameter is acceptable.

29.   (original) The method of claim 26 wherein the step of defining the at least one condition further comprises the step of modeling physical outcomes in accordance with selected parameters.

30.   (original) The method of claim 26 further comprising providing an expert system to receive the rules and the at least one condition, wherein the expert system signals indicates a failure mode criteria in accordance with the application of the rules to the conditions.

31. (currently amended) A system comprising:

a power delivery system including:

a power generator receiving an input power and generating an output power;

a sensor for detecting at least one parameter of the power delivery system; and

a controller for receiving input from the sensor and providing control signals to vary operation of the power generator; and

a remote monitor located remotely from the power delivery system, the remote monitor receiving data from the power delivery system, the remote monitor including a database for storing the data received from the power delivery system, the data including a plurality of signals that define parameters associated with the power delivery system, the remote monitor predicting a future state of operation of the power delivery system.

32. (original) The system of claim 31 wherein the remote monitor includes a rules database for storing a set of rules of operation of the power delivery system and applying the set of rules to the parameters to determine a state of operation of the power delivery system.

33. (original) The power delivery system of claim 32 wherein the remote monitor indicates a warning in accordance with the state of operation of the power delivery system.

34.   (original)   The power delivery system of claim 32 wherein the remote monitor further comprises a data analysis module that defines at least one condition for at least one parameter and applies the set of rules to the at least one condition.

35.   (original)   The system of claim 34 wherein analysis engine includes one of a fuzzy logic system and a neural network system to define the at least one condition.

36.   (original)   The system of claim 34 wherein the analysis engine defines the at least one condition by defining a range wherein if a parameter falls within the range, the condition for the at least one parameter is acceptable.

37.   (original)   The system of claim 34 wherein the analysis engine defines the at least one condition by modeling physical outcomes in accordance with selected parameters.

38.   (original)   The system of claim 31 wherein data exchanged between the remote monitor and the power delivery system is encrypted.

39.   (original)   The system of claim 31 wherein parameters sent to the remote monitor from the power delivery system may be defined by an operator.